



## Subject card

Subject name and code	Operating Systems, PG_00038297						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Robert Smyk					
	Teachers	dr inż. Robert Smyk					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours		Self-study		SUM
	Number of study hours	30	5.0		15.0		50
Subject objectives	<ul style="list-style-type: none"><li>- Learn the basics of management and administration of a typical OS (Operating System)</li><li>- Knowledge of safety rules typical OS</li><li>- Learn the basics of configuration</li><li>- Architecture of typical SO</li></ul>						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_W02	Can do elementary SO configuration tasks			[SW3] Assessment of knowledge contained in written work and projects		
	K7_U12	Can realize elementary script in SO shell			[SU1] Assessment of task fulfilment		
Subject contents	Introduction to terminology and issues of elementary operating systems. Interpreter commands in the field of SO configuration, resource management, resource search, management user, etc.   / O redirection, environment variables. General structure of systems operational. Operating system components, services, system functions. Selected issues terminology such as management, process control, threads, process synchronization. programming in the shell (Bash) of scripts that automate the work related to maintenance and administration. Elements network programming in Perl, Python or Bash. Processing text data using embedded tools and GREP or AWK processors. Basics of SO libraries in the environment embedded systems. Fundamentals of device driver management, running the driver peripheral device. Basics of operating systems security. Features of selected systems operating (Windows and Unix). Features of SO in mobile devices.						
Prerequisites and co-requisites	Knowledge of basic concepts and skills acquired during the computer science course. Basic knowledge of programming.						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Periodic Reporting	60.0%			80.0%		
	Rating of individual work during exercise	60.0%			20.0%		

Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>1. A. Silberschatz, P. B. Galvin, Podstawy systemów operacyjnych, WNT, Warszawa 2006.</li> <li>2. A. S. Tanenbaum, Systemy operacyjne. Wyd. 3, Helion, Gliwice 2010.</li> <li>3. W. Stallings, Systemy operacyjne. Struktura i zasady budowy, PWN, Warszawa 2006.</li> <li>4. K. Stencel, Systemy operacyjne, Wydawnictwo PJWSTK, Warszawa 2004.</li> <li>5. K. Lal, T. Rak, Linux. Komendy i polecenia. Praktyczne przykłady, Helion, Gliwice 2010.</li> </ol>
	Supplementary literature	<ol style="list-style-type: none"> <li>1. Ł. Sosna, Linux. Komendy i polecenia. Wyd. 3, Helion, Gliwice 2010.</li> <li>2. W. Stanisławski, D. Raczyński, Programowanie systemowe mikroprocesorów rodziny x86, PWN, Warszawa 2010.</li> <li>3. B. Goodheart, J. Cox, Sekrety magicznego ogrodu. UNIX System V Wersja 4 od środka. Podręcznik, WNT, Warszawa 2001.</li> </ol>
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>SYSTEMY OPERACYJNE [ARiSS][2024/25] - Moodle ID: 39807  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=39807">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=39807</a></p>
Example issues/ example questions/ tasks being completed	<p>Understanding the principles of working in the Linux command line.</p> <p>Preparation of the basic configuration.</p> <p>Basics of Linux firewall configuration.</p> <p>Administration and management of the basic system services.</p>	
Work placement	Not applicable	

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